Appl. No. 10/602,393
Response Dated July 17, 2008
Reply to Office Action of March 17, 2008

Docket No.: 1020.P16723
Examiner: Park, Jung H.
TC/A.U. 2616

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.   (Currently Amended) A wireless system comprising:

a memory;

a processor coupled to the memory, the processor to allocate a first portion of a transmit opportunity for an initial data burst and to allocate a second portion of the transmit opportunity for other operations including retries, wherein the allocating is performed based upon a detected criteria, the processor to calculate an upper bound for the initial data burst, defining a maximum size for the first portion, the processor to transmit packets of the initial data burst up to the upper bound during the first portion of the transmit opportunity, interrupt or stop the transmission of the initial data burst when the upper bound has been met, and perform other operations including retries of the initial data burst during the second portion of the transmit opportunity, the initial data burst and the other operations including transmitting retries of the initial data burst being transmitted in the same transmit opportunity.

2.   (Original) The wireless system of claim 1 wherein the wireless system allocates the second portion of the transmit opportunity to retry any failed packets of the initial data burst, if necessary.

3.   (Original) The wireless system of claim 1 wherein the other operations are one or more selected from the group comprising:

retry one or more packets in the initial data burst that failed, if any packets failed;

transmit another initial data burst of packets if there is sufficient time in the transmit opportunity;

release control of a channel back to a channel access controller; and

Appl. No. 10/602,393
Response Dated July 17, 2008
Reply to Office Action of March 17, 2008

Docket No.: 1020.P16723
Examiner: Park, Jung H.
TC/A.U. 2616

reallocate a first sub-portion of the second portion for a second initial data burst

and a remainder of the second portion for other operations.

4.   (Original) The wireless system of claim 1 wherein the wireless system is adapted

to allocate the first portion and the second portion based upon one or more detected

criteria.

5.   (Original) The wireless system of claim 1 wherein the wireless system is adapted

to allocate the first portion and the second portion based upon a detected channel

condition.

6.   (Original) The wireless system of claim 5 wherein the detected channel condition

is selected from the group comprising:

       received signal strength;

       detected packet errors or failures;

       received bit error rate;

       measured packet failure; and

       other indicia of the probability of packet failure.

7-8.   (Canceled).

9.   (Original) The wireless system of claim 1, wherein the wireless system further

comprises an antenna, a transceiver coupled to the antenna and to the processor.

10.   (Currently Amended) A wireless system comprising:

       a memory; and

       a processor, the processor to estimate a number of packet retries for a data

burst based upon one or more detected criteria, the processor to calculate an upper

bound for the data burst, defining a maximum size for the first portion, the

wireless system to reserve a portion of a transmit opportunity for the estimated

retries and then to transmit the data burst during a first portion of the transmit

opportunity <u>up to the upper bound, interrupt or stop transmission of the data burst</u>

<u>when the upper bound has been met</u> and <u>perform</u> any necessary retries during a

second portion of the transmit opportunity, the data burst and any necessary ~~reties~~

<u>retries</u> are transmitted within the same transmit opportunity.

11.   (Original) The wireless system of claim 10 wherein the wireless system further

comprises:

        a transceiver coupled to the processor; and

        an antenna coupled to the transceiver.

12.   (Original) The wireless system of claim 10 wherein the processor to estimate the

number of packet retries based upon one or more of a measured probability of packet

error and a probability distribution.

13.   (Currently Amended) A wireless system comprising:

        an antenna;

        a transceiver coupled to the antenna;

        a processor coupled to the transceiver;

        flash memory coupled to the processor, the wireless system to allocate a first

portion of a transmit opportunity for an initial data burst and to allocate a second portion

of the transmit opportunity for other operations including retries<u>, wherein the allocating is</u>

<u>performed based upon a detected criteria, the processor to calculate an upper bound for</u>

<u>the initial data burst, defining a maximum size for the first portion,</u> the processor to

transmit packets of the initial data burst <u>up to the upper bound</u> during the first portion of

the transmit opportunity, <u>interrupt or stop the transmission of the initial data burst when</u>

<u>the upper bound has been met,</u> and perform other operations including retries of the

initial data burst during the second portion of the transmit opportunity, the initial data

burst and the other operations including transmitting retries of the initial data burst being

transmitted in the same transmit opportunity.

Appl. No. 10/602,393
Response Dated July 17, 2008
Reply to Office Action of March 17, 2008

Docket No.: 1020.P16723
Examiner: Park, Jung H.
TC/A.U. 2616

14.   (Original) The wireless system of claim 13 wherein the wireless system allocates the second portion of the transmit opportunity to retry any failed packets of the initial data burst, if necessary, wherein the initial data burst and the retries are transmitted in the same transmit opportunity.

15.   (Currently Amended) A wireless system comprising:

a processor, the processor adapted to calculate a probability of packet failure, to calculate an expected maximum number of retries based on the calculated probability of packet failure and a probability distribution, and to reserve a portion of a transmit opportunity for retries based upon the expected number of retries, the processor to calculate an upper bound for a data burst, defining a maximum size for a first portion of a transmit opportunity, the processor to transmit a the data burst up to the upper bound, interrupt or stop the transmission of the data burst when the upper bound has been met and perform any necessary retries within the same transmit opportunity.

16.   (Previously Presented) The wireless system of claim 15 wherein the processor to calculate an upper bound for an initial data burst based upon the expected maximum number of retries and the size of the transmit opportunity.

17.   (Original) The wireless system of claim 15 wherein the probability distribution comprises a Binomial distribution.

18.   (Currently Amended) A method comprising:

receiving permission to transmit information during a transmit opportunity;

allocating a first portion of the transmit opportunity for an initial data burst based upon a detected criteria;

allocating a second portion of the transmit opportunity for other operations including retries based upon the detected criteria;

<u>calculating an upper bound for the initial data burst, defining a maximum size for</u> <u>the first portion;</u>

transmitting an initial data burst <u>up to the upper bound</u> during the first portion of the transmit opportunity;

<u>interrupting or stopping the transmission of the initial data burst when the upper</u> <u>bound has been met;</u> and

transmitting any necessary retries during the second portion of the transmit opportunity, the initial data burst and the retries for the data burst being transmitted in the same transmit opportunity.

19.   (Canceled).

20.   (Original) The method of claim 18 wherein the allocating of the first and second portions being based upon a detected channel condition.

21.   (Original) The method of claim 20 wherein the channel condition is selected from the group comprising:

       received signal strength;

       detected packet errors or failures;

       received bit error rate;

       measured packet failure; and

       other indicia of the probability of packet failure.

22.   (Original) The method of claim 18 wherein the other operations are one or more selected from the group comprising:

       wherein the other operations comprise one or more of the following:

       retrying one or more packets in the initial data burst that failed, if any packets failed;

       transmitting another initial data burst of packets, if retries are unnecessary, or if there is sufficient time in the transmit opportunity after transmitting any retries;

releasing control of a channel back to a channel access controller; and

reallocating a first sub-portion of the second portion for a second initial data burst

and a remainder of the second portion for other operations.

23.   (Previously Presented) A method comprising:

receiving permission to transmit information during a transmit opportunity;

allocating a first portion of the transmit opportunity for an initial data burst ;

allocating a second portion of the transmit opportunity for other operations including

retries, wherein the allocating is performed based upon a detected criteria, the method

comprising:

calculating an upper bound for the initial data burst, defining a maximum size for

the first portion; and

transmitting packets of the initial data burst up to the upper bound;

interrupting or stopping the transmission of the initial data burst;

transmitting any retries of the initial data burst, the initial data burst and the retries

for the data burst being transmitted in the same transmit opportunity.

24.   (Original) The method of claim 18 wherein the receiving permission to transmit

information during a transmit opportunity comprises at least one of:

requesting permission to transmit data over a channel; and

receiving permission to transmit data over the channel.

25.   (Original) The method of claim 18 wherein the receiving permission to transmit

information during a transmit opportunity comprises requesting and receiving permission

to transmit during a scheduled transmit opportunity.

26.   (Currently Amended) A method of allocating time during a transmit opportunity,

the method comprising:

receiving permission to transmit information during a transmit opportunity;

allocating a first portion of the transmit opportunity for an initial data burst based upon a detected channel condition;

allocating a remaining portion of the transmit opportunity for other operations, the other operations to be determined based upon the success or failure of the transmission of packets in the initial data burst;

calculating an upper bound for the initial data burst, defining a maximum size for the first portion;

transmitting the initial data burst up to the upper bound during the first portion of the transmit opportunity;

interrupting or stopping the transmission of the initial data burst when the upper bound has been met; and

performing any other necessary operations during the allocated remaining portion of the transmit opportunity.

27.   (Original) The method of claim 26 wherein the other operations include one or more selected from the group comprising:

retrying one or more packets in the initial data burst that failed, if any packets failed;

transmitting another initial data burst of packets, if retries are unnecessary, or if there is sufficient time in the transmit opportunity after transmitting any retries;

releasing control of a channel back to a channel access controller; and

reallocating a first sub-portion of the second portion for a second initial data burst and a remainder of the second portion for other operations.

28.   (Currently Amended) A method of allocating time during a transmit opportunity comprising:

detecting a channel quality or other criteria;

reserving a portion of a transmit opportunity for expected retries based upon the detected channel quality or other criteria;

calculating an upper bound for an initial data burst, defining a maximum size for a first portion of the transmit opportunity;

transmitting ~~an~~ the initial data burst up to the upper bound during ~~a~~ the first portion of the transmit opportunity;

interrupting or stopping the transmission of the initial data burst when the upper bound has been met; and

transmitting retries during the reserved portion of the transmit opportunity.

29.   (Original) The method of claim 28 wherein the detecting is selected from the group comprising:

detecting a bit error rate;

detecting packet failure or a packet failure rate;

detecting packet retries;

detecting a signal-to-noise ratio;

detecting a received signal strength.

30.   (Currently Amended) A method comprising:

receiving permission to transmit information during a transmit opportunity;

detecting a criteria;

selecting one of the following transmit modes based upon the detected criteria:

        a) allocating a first portion of the transmit opportunity for an initial data burst and a second portion of the transmit opportunity for retries;

        calculating an upper bound for the initial data burst, defining a maximum size for the first portion;

        transmitting packets of the initial data burst up to the upper bound during the first portion of the transmit opportunity;

        interrupting or stopping the transmission of the initial data burst when the upper bound has been met; and

        performing other operations including retried of the initial data burst during the second portion of the transmit opportunity;

Appl. No. 10/602,393
Response Dated July 17, 2008
Reply to Office Action of March 17, 2008

Docket No.: 1020.P16723
Examiner: Park, Jung H.
TC/A.U. 2616

b) not allocating a specific portion of the transmit opportunity for retries; and

transmitting packets during the same transmit opportunity according to the selected transmit mode.

31.   (Original) The method of claim 30 wherein the criteria comprises a Quality of Service (QoS) field or QoS value or other value.

32.   (Original) The method of claim 30 wherein transmit mode a) relies upon one or more subsequent transmit opportunities or channel accesses to transmit one or more retries associated with the initial data burst.

33.   (Currently Amended) An article comprising:
        a storage medium;
        said storage medium including stored thereon instructions that, when executed by a processor, result in:
        receiving permission to transmit information during a transmit opportunity;
        detecting a criteria;
        allocating a first portion of the transmit opportunity for an initial data burst and a second portion of the transmit opportunity for other operations including retries based upon the detected criteria;
        calculating an upper bound for the initial data burst, defining a maximum size for the first portion;
        transmitting an initial data burst up to the upper bound during the first portion of the transmit opportunity;
        interrupting or stopping the transmission of the initial data burst when the upper bound has been met; and
        performing during the second portion of the transmit opportunity, the initial data burst and other operations including retries being transmitted in the same transmit opportunity.

Appl. No. 10/602,393
Response Dated July 17, 2008
Reply to Office Action of March 17, 2008

Docket No.: 1020.P16723
Examiner: Park, Jung H.
TC/A.U. 2616

34.   (Original) The article of claim 33 wherein the instructions resulting in detecting a criteria comprise detecting a channel condition.

35.   (Currently Amended) A method comprising:

receiving permission to transmit information during a transmit opportunity;

detecting one or more criteria; and

selecting one of the following transmit modes based upon the detected criteria:

a) a transmit mode in which packets are transmitted so as to decrease latency for at least some of the packets; and

b) a transmit mode in which packets are transmitted so as to increase data throughput;

wherein transmit mode a) comprises reserving a specific portion of a transmit opportunity for retries, the retries transmitted in the same transmit opportunity as an initial data burst, calculating an upper bound for the initial data burst, defining a maximum size for a first portion of the transmit opportunity, transmitting packets of the initial data burst up to the upper bound during the first portion of the transmit opportunity, interrupting or stopping the transmission of the initial data burst when the upper bound has been met, and performing other operations including retries of the initial data burst during a second portion of the transmit opportunity and transmit mode b) comprises transmitting as many packets as possible during the transmit opportunity without specifically reserving a portion of the transmit opportunity for retries.

36.   (Original) The method of claim 35 wherein the criteria comprises a Quality of Service (QoS) field or QoS value or other value.

37.   (Canceled).